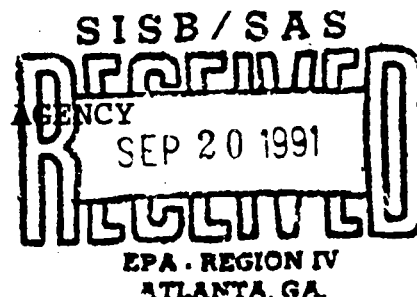


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV



IN THE MATTER OF:

London Mill Wastewater  
Plant  
Polk County, Tennessee

OXY Oil and Gas USA Inc.  
110 West Seventh Street  
Tulsa, Oklahoma 74102

Respondent.

)  
)  
) Proceeding Under Sections 104,  
) 106, and 122 of the Comprehensive  
) Environmental Response,  
) Compensation and Liability Act of  
) 1980, as amended,  
) 42 U.S.C. Sections 9604, 9606,  
) and 9622.  
)  
) EPA DOCKET NO.: 91-36-C  
)  
)

ADMINISTRATIVE ORDER ON CONSENT

I. JURISDICTION

- A. This Administrative Order on Consent ("Consent Order") is entered into by the United States Environmental Protection Agency ("EPA") with OXY Oil and Gas USA Inc. ("Respondent"), pursuant to the authority vested in the President of the United States by Sections 104, 106 and 122 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (hereinafter CERCLA), 42 U.S.C. Sections 9604, 9606, and 9622, as amended by the Superfund Amendments and Reauthorization Act of 1986 (hereinafter SARA), P.L. 99-499. This authority was delegated by the President to the Administrator of EPA by Exec. Order No. 12580, dated January 23, 1987, 52 Fed. Reg. 2923 (January 29, 1987), and was further delegated to the Regional Administrator of Region IV, EPA, and redelegated to the Director, Waste Management Division. Notice of the issuance of this Order has been given to the State of Tennessee.
- B. The parties stipulate that EPA has made the necessary determinations regarding the release or threat of release of hazardous substances, as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), from the following location:

London Mill Wastewater Treatment Plant  
Polk County, Tennessee

- C. Respondent agrees that EPA has the right to enforce this Consent Order under CERCLA in a court of competent jurisdiction. In any action to enforce this Consent Order, Respondent agrees not to challenge the basis for the Consent Order or its applicability to the Respondent. The Findings of Fact and Conclusions of Law herein are effective only for the purposes of this Consent Order and are not binding in any other proceeding. Respondent agrees to undertake all actions required by this Order. Respondent agrees not to challenge these Findings, Conclusions or Determinations for purposes of enforcing this Consent Order.
- D. It is understood and agreed that entering into this Agreement does not constitute an admission by OXY that it or any of its predecessors released hazardous materials at the Site, nor of liability for any remedial action or any action not specified herein to prevent a release or threatened release of hazardous materials from the Site, nor of liability for any claims for damage to persons or property which may be asserted by third persons.

## II. PARTIES BOUND

This Consent Order shall apply to and be binding upon the following parties:

- A. Respondent, its successors and assigns; and
- B. EPA and its agents, employees and contractors acting under or for EPA.
- C. The Respondent shall provide a copy of this Consent Order to each contractor hired to perform any of the requirements of the Order portion of this Consent Order and shall condition all contracts entered into hereunder in conformance with the terms of this Consent Order. The Respondent's contractors shall provide written notice of the Consent Order to all subcontractors hired to perform any portion of the requirements of this Consent Order. The Respondent shall nonetheless be responsible for ensuring that their contractors and subcontractors perform the requirements contemplated herein in accordance with this Consent Order.

### III. FINDINGS OF FACT

For the purposes of this Consent Order, EPA finds that:

- A. The London Mill Wastewater Treatment Plant Site ("Site") is located on Burra-Burra Creek, in the Burra-Burra Creek Watershed. The Site lies northwest of Isabella, Tennessee, immediately east of Ducktown, Tennessee, and south of Reesetown, Tennessee.
1. The Site is located in a former mining district, the Ducktown Mining District of Tennessee, commonly known as the Copper Basin which extends approximately 100 square miles in Polk County, Tennessee, and Cherokee County, North Carolina [hereinafter referred to as "Copper Basin"]. The Copper Basin includes many inactive mines, disposal areas, and industrial facilities. Many of these mines were not owned and operated or owned or operated by OXY.
  2. The Site is a lime neutralization physical/chemical wastewater treatment facility utilizing lime, polymers, and sulfuric acid in the treatment process. The Site was originally constructed by OXY in 1972 to treat wastewater from the London Mill Floatation Plant, an ore processing facility, which operated prior to 1945 until 1987. The Site currently processes wastewater from a retention pond that receives acid mine drainage from the McPherson Mine, and drainage water from a Tailings Pond located at the head of Burra-Burra Creek. In addition, the Site also receives water directly from the Isabella/Eureka Mine. Water is pumped from the deep mines to prevent contaminated groundwater from entering the local shallow aquifer which is utilized by approximately 200 people as the sole source of potable water.
  3. The Site's design capacity is approximately 5 million gallons per day. The present flows into the Site average between 1.8 and 2.5 million gallons per day.

4. The Site is owned by the Industrial Development Board of the City of Copper Hill ("Board") and construction of the Site was financed by the sale of Industrial Development Bonds ("Bonds"). Respondent constructed the Site and is paying the Bonds pursuant to a lease from the Board. Such facilities, including the Site were subleased to Tennessee Chemical Company.
- B. OXY Oil and Gas USA Inc. is the successor in interest to Cities Service Company which was a past lessee and operator of the Site. In 1963, Cities Service Copper Corporation, a Delaware corporation, acquired certain of the properties and assets in the "Copper Basin" from the Tennessee Corporation, a New York Corporation. In 1982, Cities Service Company sold the assets to Tennessee Chemical Company.

Tennessee Chemical Company has filed for Chapter 11 bankruptcy in the Eastern District of Tennessee. Until September 20, 1991, Boliden Intertrade A.G. ("Boliden") will operate the Site under an agreement between Boliden, the State of Tennessee and EPA.
- C. From 1987 until the present, EPA Region IV Superfund personnel have investigated the Site, and documented the impacts of releases of hazardous substances into the environment from a 8500 acre parcel of land in the Copper Basin much of which is owned by Tennessee Chemical Company. In addition, the Tennessee Department of Environment and Conservation ("TDEC"), via their National Pollutant Discharge Elimination System ("NPDES") permitting program, has collected information on wastewater discharges in the Copper Basin. The TDEC tested the influent to the site on April 30, 1991. The McPherson and Isabella/Eureka mine water and the Tailings Pond drainage were found to be contaminated with heavy metals and were acidic. In 1983, Tennessee classified Burra-Burra Creek as a freshwater fishery. All of the metals concentrations presented below exceed chronic and/or acute EPA Ambient Water Quality Criteria for the protection of aquatic life in freshwater ecosystems. A summary of those findings is presented below (explanatory notes for the table are given below):

<u>Hazardous Substance</u>	<u>Concentrations</u>	<u>Sample Point</u>	<u>Date</u>
Copper	503 ppb	McPherson Mine	4/30/91
	117,000 ppb	Isabella Mine	4/30/91
	9,000 ppb	Eureka Mine	1/28/88
	967 ppb	McPherson/Pond*	4/30/91
Lead	24 ppb	Tailings Pond	1/25/88
	36 ppb	Isabella Mine	4/30/91
	990 ppb	Eureka Mine	1/28/88
Zinc	6,220 ppb	McPherson Mine	4/30/91
	32,600 ppb	Isabella Mine	4/30/91
	33,000 ppb	Eureka Mine	1/28/88
	3,480 ppb	McPherson/Pond*	4/30/91
	240 ppb	Tailings Pond	1/25/88
Cadmium	24 ppb	Isabella Mine	4/30/91
	3 ppb	McPherson/Pond*	4/30/91

Notes: ppb = parts per billion; refers to water samples.  
Pond = Tailings Pond at the head of Burra-Burra Creek.

1. In 1991, the State of Tennessee tested the acidity of the deep mines. In 1988, NUS, a contractor for EPA tested the acidity of the Tailings Pond. The acidity of all the waters that were tested is below the established minimum of 6.0 for the protection of aquatic life. The results of those tests are summarized in the table below:

<u>Acidity (SU)</u>	<u>Sample Point</u>	<u>Date</u>
3.8	McPherson Mine	4/30/91
2.7	Isabella Mine	4/30/91
4.0	McPherson/Pond*	4/30/91
2.8	Tailings Pond	1/25/88

Notes: SU = Measurement of pH in Standard Units.  
Pond = Tailings Pond at the head of Burra-Burra Creek

- D. If the drainage from the deep mines and Tailings Pond discharge without treatment, then Burra-Burra Creek, North Potato Creek, and the Ocoee River will experience an increase in acidity and dissolved metals concentrations. Introduction of these contaminants will prevent the recovery of fish and aquatic life in these waters.

- E. If the McPherson and Isabella/Eureka Mines are not pumped, and the Site does not process the drainage, the acidic, metallic waters from the mines may potentially reach private drinking water wells in Isabella and Reesetown. Limited testing to date indicates that the tested wells meet applicable drinking water standards.
- F. A survey conducted by EMPE, Inc., in March, 1991, shows that there are approximately 200 persons in Isabella and Reesetown that use groundwater as their primary drinking water source.
- G. On July 31, 1991, the Environmental Services Division of EPA collected samples of sludge from the Site and analyzed the sludge for toxicity characteristics pursuant to the Toxicity Characteristic Leaching Procedure promulgated by EPA on March 29, 1990, 55 Fed. Reg. 11798. The results from the Environmental Services Division's analysis indicate that the sludge does not contain toxic characteristics as defined by the Resource Conservation and Recovery Act of 1976 ("RCRA") and the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. Section 6901 et seq.

#### IV. CONCLUSIONS OF LAW

Based on the Findings of Fact set out above, EPA concludes that:

- A. The Site is a "facility," as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).
- B. Respondent is a "person," as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).
- C. Copper, Lead, Zinc and Cadmium are "hazardous substances," as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).
- D. The past, present or potential migration of hazardous substances from the Site constitutes an actual or threatened release, as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

## V. DETERMINATIONS

Based on the Findings of Fact and Conclusions of Law set out above, EPA has determined that:

- A. The release or threat of release of hazardous substances at the Site may present an imminent and substantial endangerment to the public health or welfare or the environment.
- B. In order to protect the public health and welfare and the environment, it is necessary that Respondent assume continued operation of the Site to abate the release or threat of release of hazardous substances from the facility into the environment.
- C. The actions required by this Consent Order are consistent with the National Contingency Plan, 40 C.F.R. Part 300, et seq.

## VI. ORDER

The parties having reached a resolution of the issues involved in this matter, it is hereby AGREED and ORDERED that Respondent shall undertake the following activities, pursuant to Sections 104, 106(a), and 122 of CERCLA, 42 U.S.C. Sections 9604, 9606(a), and 9622:

- A. Respondent shall initiate no later than September 20, 1991, the following measures, which shall be undertaken at the direction of EPA through its On-Scene Coordinator ("OSC"):
  - 1. Operation and maintenance of the London Mill Wastewater Treatment Plant until EPA and the Respondent modify this Consent Order in writing after the influent to the Site meets appropriate water quality standards without treatment.
  - 2. The effluent from the London Mill Wastewater Treatment Plant shall meet the following effluent limitations:
    - a. The Site shall meet all discharge limitations, monitoring procedures and reporting requirements specified in Appendix I of this Order except for the discharge limitation for pH beginning ninety (90) days from the effective date of this Consent

Order. Respondent shall, however, use best efforts to meet the effluent limitations in Appendix I beginning ninety days from the signing of the Consent Order. Beginning one hundred and thirty five (135) calendar days after the effective date of this Consent Order, the Site shall meet the pH discharge limitations, monitoring procedures and reporting requirements and instream monitoring requirements specified in Appendix I of this Order. Appendix I is hereby incorporated by reference into this Order.

- b. Beginning three hundred and sixty-five (365) calendar days after EPA approval of the Response Action Plan ("RAP") as defined in Section VI.A.4., the Site shall meet the discharge limitations, monitoring procedures, and reporting requirements specified in Appendix II of this Order. Appendix II is hereby incorporated by reference into this Order.
3. a. Except with respect to any extensions agreed to by EPA and Respondent in writing, Respondent shall be liable for stipulated penalties for failure to comply with the following terms of this Consent Order:
- i. The monthly average concentration limitations and daily maximum concentration limitations from the Site that are specified in Appendix I, Part I.A.1. and Appendix II, Part I.A.1.
  - ii. The monitoring frequency and sample type requirements that are specified in Appendix I, Part I., Part II.B.; and Appendix II, Part I., Part II.B. and Part III.B.
  - iii. The reporting requirements that are specified in Appendix I, Part I.D., Part II.B.; and Appendix II, Part I.D., Part II.A., Part II.B.3. and Part III.B.



b. Compliance by Respondent, for the purposes of determining whether a stipulated penalty shall be assessed, shall include completion of any of the required tasks and activities in an acceptable manner and within the specified time schedules established by and approved under this Consent Order.

c. All penalties shall begin to accrue on the day that complete performance is due or a violation occurs, regardless of whether the United States has notified Respondent of a violation, and continue to accrue through the final day of correction of the noncompliance. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Decree.

d. All penalties owed to the United States shall be payable within thirty (30) days of receipt of the notice of noncompliance from EPA. Respondent shall pay interest on the unpaid balance, which shall begin to accrue at the end of the thirty-day period at the rate established by the Department of Treasury under 31 U.S.C. Section 3717. In the event Respondent fails to pay stipulated penalties within forty-five (45) days of receipt of the notice of noncompliance, EPA may institute proceedings to collect the penalties, and any interest that has accrued.

e. The provision for stipulated penalties in this Consent Order shall not be construed as prohibiting, altering, or in any way limiting the sanctions available by virtue of Respondent's violation of the Consent Order or the statutes and regulations upon which it is based.

f. The Respondent shall pay the following stipulated penalties for noncompliance with any of the requirements listed in paragraphs 3.a. (i), (ii) or (iii) above:

- i. For each day in which any one of the daily average concentration limitations set forth in Appendix I, Part A is exceeded the Respondent shall pay the sum of \$100.00 for each parameter exceeded by 0% to 50%; the sum of \$200.00 for each parameter exceeded by 50% to 100%; and the sum of \$400.00 for each parameter exceeded by 100% or more.

- ii. For each month in which any one of the average monthly concentration limitations set forth in Appendix I, Part A is exceeded, Respondent shall pay the sum of \$500.00 for each parameter exceeded by 0% to 50%, the sum of \$1000.00 for each parameter exceeded by 50% to 100%, and the sum of \$2,000.00 for each parameter exceeded by 100% or more.
  - iii. For each day in which any one of the daily average concentration limitations set forth in Appendix II, Part I.A.1. is exceeded, the Respondent will pay the sum of \$200.00 for each parameter exceeded by 0% to 50%; the sum of \$400.00 for each parameter exceeded by 50% to 100% and the sum of \$500.00 for each parameter exceeded by 100% or more.
  - iv. For each month in which any one of the average monthly concentration limitations set forth in Appendix II, Part I.A.1. is exceeded, the Respondent shall pay the sum of \$2,000.00 for each parameter exceeded by 0% to 50%, the sum of \$5,000.00 for each parameter exceeded by 50% to 100%, and the sum of \$10,000.00 for each parameter exceeded by 100% or more.
  - v. For failure to monitor at the frequency and/or monitor the proper sample type required by Appendix I or Appendix II, the Respondent shall pay the sum of \$400.00 for each violation.
  - vi. For failure to submit a report required by Appendix I or Appendix II, Respondent shall pay the sum of \$200.00 per day of violation.
4. Within one hundred and eighty (180) calendar days of the effective date of this Consent Order, Respondent shall submit a Response Action Plan which will include a sampling and analysis plan and all technical designs and specifications for modification/construction at the Site for a wastewater treatment system that is capable of producing effluent that will meet the discharge limitations described in Appendix II.

5. Subsequent to EPA's review of the RAP, EPA shall notify Respondent in writing of EPA's approval or disapproval of the RAP or any portion of the RAP. In the event of any disapproval, EPA shall specify in writing both the deficiencies and any EPA modifications regarding the RAP. Within 30 calendar days of receipt of notification by EPA that the RAP requires modification and revisions, Respondent shall amend and submit a revised RAP to the OSC. In the event of subsequent disapproval of the RAP, EPA retains the right to complete the work or any portion thereof pursuant to its authority under CERCLA.
6. Within ninety (90) calendar days of the effective date of this Consent Order, Respondent shall submit to the OSC for review and approval a Groundwater Well Installation and Monitoring Plan that will provide for the following:
  - a. A detailed construction proposal for the installation of at least four groundwater monitoring wells in the aquifer in locations that will facilitate early detection of migrating contaminants from the Site toward the towns of Reesetown and Isabella.
  - b. A characterization of the hydrogeologic framework in the area between the Site and the towns of Isabella and Reesetown including groundwater gradient data for specific sources of contamination: the retention pond, the Tailings Pond, and the deep mines.
  - c. Operation of the groundwater monitoring wells that Respondent shall install pursuant to this Consent Order within ninety (90) days from the date of EPA approval of the Groundwater Well Installation and Monitoring Plan.
  - d. Groundwater monitoring at the groundwater wells that Boliden Intertrade will install in the towns of Isabella and Reesetown.
  - e. A groundwater monitoring schedule that requires monitoring upon completion of the wells in accordance with the approved monitoring plan.

- f. Identification of parameters that will be analyzed under the groundwater monitoring plan.
  - g. A reporting schedule that will require Respondent to submit reports of groundwater data and analysis to the OSC for review and approval.
7. A. Respondent shall undertake the following measures to ensure that the sludge produced from operation of the Site is disposed of in a manner that is consistent with the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 ("RCRA") and the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. Section 6901 et seq., 40 CFR Parts 264, 265, 270, and 124:
- i. In October of 1992, and every three hundred and sixty-five (365) calendar days thereafter, Respondent shall sample the sludge and determine if the sludge contains any waste exhibiting a toxicity characteristic pursuant to the Toxicity Characteristic Leaching Procedure ("TCLP") promulgated by EPA on March 29, 1990, 55 Fed. Reg. 11798.
  - ii. Respondent shall verbally notify the OSC by telephone and send a confirmation in writing at least fourteen (14) calendar days before any sampling of the sludge to allow EPA the opportunity to oversee the sampling event and/or to take split samples. The notification may be by telephone to be confirmed in writing.
  - iii. Within fifteen (15) calendar days after receipt of sludge sampling results, Respondent shall submit all analytical results from sampling the sludge to the OSC for review. Upon the OSC's review of the analytical results, EPA may request additional information from Respondent and disapprove of the results in writing with a statement of the reasons for the disapproval. In the event EPA requests additional information and/or provides notice of its disapproval of the analytical

results, Respondent, within the time period set forth in EPA's request and/or notice, shall provide such additional information requested and/or conduct additional sampling as EPA deems necessary.

- iv. Within five (5) calendar days of obtaining analytical results from the sampling of the sludge, Respondent shall notify EPA if any solid waste exhibits a toxicity characteristic pursuant to TCLP.
  - v. In the event the analytical results from the sampling of the sludge confirm that wastes in the sludge exhibit a toxicity characteristic pursuant to TCLP, Respondent must submit, within sixty (60) calendar days of Respondent's receipt of the written and QAQC verified results, to the OSC for review a plan that describes Respondent's plan for removal and disposal of the sludge. The OSC will approve or disapprove of Respondent's plan for sludge removal and disposal.
- B. All activities undertaken by Respondent pursuant to this Consent Order shall be performed in accordance with all applicable, relevant and appropriate federal, state and local laws.
  - C. All activities performed pursuant to this Consent Order shall be under the direction and supervision of a qualified professional engineer or other qualified professional. Respondent shall notify EPA in writing of the identity of each such engineer or other professional and of any contractors or subcontractors to be used in carrying out the terms of this Consent Order, in advance of their work at the site. EPA reserves the right of disapproval of any engineer or other professional selected by Respondent.
  - D. Respondent will use quality assurance, quality control, and chain of custody procedures in accordance with EPA Region IV Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual (U.S. EPA Region IV, Environmental Services Division, February 1, 1991), throughout all sample collection and analysis activities. Respondent will consult with EPA in planning for all sampling and analysis. Respondent

shall provide a quality control report to EPA certifying that all activities have been performed as approved.

- E. Upon request by EPA, Respondent shall provide EPA the opportunity to split samples of any samples collected in accordance with the requirements of this Consent Order.
- F. Respondent shall appoint a Project Coordinator who shall be responsible for implementation of this Consent Order and the activities required herein. All reports, comments and other correspondence directed to Respondent will be made available to the Project Coordinator. Respondent reserves the right to change the Project Coordinator upon written notice to EPA.
- G. EPA shall appoint an On-Scene Coordinator ("OSC") who shall have the authority vested by the National Contingency Plan at 40 C.F.R. Part 300. The OSC will be EPA's designated representative at the Site and will have the right to move freely about the Site at all times when work is being carried out pursuant to this Consent Order. The OSC will advise Respondent as soon as he/she becomes aware that any action taken pursuant to the work plan is not consistent with the NCP.
- H. Documents, including reports, approvals, disapprovals, and other correspondence, to be submitted pursuant to this Consent Order, will be sent by certified mail to the following addressees or to such other addressees as Respondent or EPA hereafter may designate in writing:

1. Documents or correspondence to EPA should be sent in triplicate to:

Charlie Stevens  
On-Scene Coordinator  
U.S. EPA-Region IV  
345 Courtland St. N.E.  
Atlanta, GA 30365

2. Documents or correspondence to Respondent should be sent to:

OKY Oil and Gas USA Inc.  
Attention: Herman Fritschen  
Manager  
Safety, Environment and Health  
P.O. Box 300  
Tulsa, OK 74102

- I. Respondent may assert a confidentiality claim, if appropriate, covering part or all of the information provided under this Consent Order, pursuant to 40 C.F.R. § 2.203(b). Such an assertion shall be adequately substantiated when the assertion is made. Analytical data may not be claimed as confidential by Respondent. Information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when it is submitted or made available to EPA, it may be made available to the public by EPA without further notice to Respondent.
- J. Respondent shall obtain site access agreements from the present owner of the Site by the effective date of this Consent Order. Such agreements shall provide access for EPA, its employees, contractors and consultants, and Respondent, including any agents or consultants acting on behalf of Respondent in carrying out the provisions of this Order. Respondent is not EPA's representative with respect to obtaining any such agreements and copies of these agreements shall be provided to EPA prior to initiation of field activities by Respondent. If access agreements are not obtained within the time referenced above, Respondent shall immediately notify EPA of its failure to obtain access. EPA may then use its legal authorities to obtain access for Respondent, and Respondent will reimburse the United States for any costs that it incurs as a result of obtaining site access.
- K. Respondent shall preserve all records developed pursuant to the implementation of this Order for a period of six (6) years following completion of all work conducted by Respondent pursuant to this Order.
- L. Upon agreement of the Parties, this Consent Order shall be amended as necessary to address such additional removal work necessary to adequately decontaminate the Site in order to protect public health and the environment or for such other reasons as the Parties may find mutually desirable.
- M. Any amendments pertaining to the work to be accomplished or any activities required hereunder must be reduced to writing by a duly authorized representative of the Respondent and the OSC within 48 hours after agreement is reached, so that there will be no delay in proceeding to accomplish the work requirements.

- N. Notwithstanding compliance with the terms of this Order, Respondent may be required to take additional response actions under CERCLA through additional EPA action, in order to abate endangerment posed by conditions at this Site.
- O. In the event that the OSC determines that activities implemented by Respondent are not in compliance with this Order or that any other circumstances or activities are creating an imminent and substantial endangerment to the public health or welfare or the environment, the OSC may order Respondent to halt further implementation of this Order for such period of time as is necessary to abate the endangerment. In addition EPA may carry out all activities pursuant to this Order and such other activities as it deems necessary and consistent with the National Contingency Plan.
- P. Neither the United States nor any agency thereof shall be liable for any injuries or damages to persons or property resulting from acts or omissions of Respondent, its officers, directors, employees, agents, servants, receivers, trustees, successors, or corporations, subsidiaries, contractors or consultants, in carrying out activities pursuant to this Consent Order.
- Q. Respondent is advised that pursuant to Section 106(b) of CERCLA, willful violation of, or failure to comply with, this Consent Order, or any portion thereof, may subject Respondent to a civil penalty of not more than \$25,000 for each day in which such violations occur or in which such failure to comply continues. Failure to comply with this Consent Order, or any portion thereof, without sufficient cause, may also subject Respondent to liability pursuant to Section 107(c)(3) of CERCLA for damages in the amount of three (3) times the total of all costs incurred by the government as a result of Respondent's failure to take proper action.
- R. Nothing herein is intended to release any claims, causes of action or demands in law or equity against any person, firm, partnership, or corporation not a signatory to this Consent Order for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous substances, hazardous wastes, pollutants, or contaminants found at, taken to, or taken from the Site. This Consent Order does not constitute preauthorization of funds under Section 111(a)(2) of



CERCLA. Further, Respondent waives any rights it may have to seek reimbursement from the Superfund under Sections 106(b)(2), 111 and 112 of CERCLA for any costs incurred or to be incurred by Respondents in performing the removal action at the Site and complying with the terms of this Consent Order.

- S. No informal advice, guidance, suggestions or comments by EPA regarding reports, plans, specifications, schedules or any other writing submitted by the Respondent shall be construed as relieving the Respondent of his obligation to obtain such formal approvals as may be required herein.
- T. Nothing contained herein shall be deemed to prevent OXY from seeking a change in the classification of the receiving waters of the effluent from the Site. In the event the waters of the effluent are reclassified by the State, OXY may petition EPA in writing for an amendment to the Order.
- U.
  - 1. Respondent's activities under this Consent Order shall be performed within the time limits set forth in this Order unless performance is delayed by events which constitute a force majeure. For purposes of this Consent Order, a force majeure is defined as any event arising from causes beyond the reasonable control of Respondents which could not have been prevented by the exercise of due diligence. The requirement that the Respondent exercise "due diligence" includes using best efforts to anticipate any potential force majeure event (1) as it is occurring and (2) following the potential force majeure event, such that the delay is minimized to the greatest extent possible. Respondents failure to apply for approval and/or failure to provide information in its possession or control to the EPA shall not constitute a force majeure. Failure of Respondent to perform its obligations in a timely manner shall not be excused if the delay is contributed to or caused by Respondent's failure to make contracts for any required materials or services.
  - 2. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a force majeure event, the Respondent shall notify orally the OSC or, in his or her absence, the Director of the Hazardous Waste Management Division, EPA Region IV within three (3) working days, and in writing within ten (10) calendar days. Such

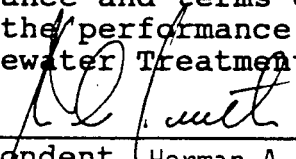
written notice shall describe the anticipated length of the delay, the cause or causes of the delay, the measures taken and to be taken by Respondent to prevent or minimize the delay, and the timetable by which those measures will be implemented.

3. Failure of the Respondents to comply with the notice requirements in paragraph I.E. above will constitute a waiver of the Respondents right to invoke the benefits of this Section with respect to that event.

- V. The effective date of this Consent Order shall be the date it is signed by the Director, Waste Management Division. Notice of the execution shall be given to Respondent and shall be deemed to have been received by the Respondent upon receipt by counsel for Respondent.

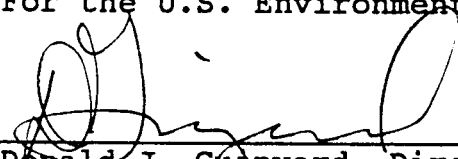
#### CONSENT

OXY Oil and Gas USA Inc., the Respondent in the London Mill Wastewater Treatment Plant Administrative Consent Order, has had an opportunity to confer with EPA and hereby consents to the issuance and terms of the foregoing Administrative Consent Order for the performance of the Removal Action at the London Mill Wastewater Treatment Plant Site in Polk County, Tennessee.

  
 Respondent Herman A. Fritschen  
 OXY Oil and Gas USA Inc.

Date 9/13/91

For the U.S. Environmental Protection Agency

  
 Donald J. Guinyard, Director  
 Waste Management Division  
 U.S. EPA, Region IV  
 345 Courtland Street, N.E.  
 Atlanta, Georgia 30365

Date 9-17-91

APPENDIX 1  
AOC No. 91-36-C

PART I

A. EFFLUENT LIMITATIONS AND MONITORING AND REPORTING REQUIREMENTS

1. Respondent shall discharge water from defunct mines and tailings pond overflow waters through the Site to Burra-Burra Creek at mile 1.5. The discharge from the site shall be limited and monitored by the Respondent as specified below.

<u>Effluent Characteristics</u>	<u>Effluent Limitations</u>		<u>Monitoring Requirements</u>	
	Monthly Avg. Conc. mg/l	Daily Max. Conc. mg/l	Measurement Frequency	Sample Type
Flow*	report	report	continuous	recorder
Copper	0.05	0.10	2/week	composite
Cadmium	0.013	0.026	1/month	composite
Chromium	0.13	0.26	1/month	composite
Iron	1.3	2.6	2/week	composite
Lead	0.07	0.13	2/week	composite
Zinc	0.12	0.23	2/week	composite
Settleable Solids	-	0.5**	2/month	grab
Suspended Solids	30.0	40.0	5/week	composite
Total dissolved solids, effluent	report	2000.0	1/month	composite
Phenols	1.5	3.0	2/week	grab
BOD <sub>5</sub>	35.0	45.0	1/week	composite
pH***			continuous	recorder
dissolved oxygen	monitor	monitor	continuous	

\* Respondent shall submit reports for monthly average flow and maximum daily flow in million gallons per day (MGD).

\*\* The daily maximum concentration of settleable solids shall be 0.5 milliliters per liter.

\*\*\* The continuous recorded pH shall not be less than 6.0 standard units nor greater than 10.0 standard units for ninety-nine percent (99%) of the time on a thirty (30) day basis, i.e., accumulated excursions are limited to a total of 432 minutes per thirty (30) day period. Additionally, any single excursion outside the 6.0 - 10.0 range shall not exceed sixty (60) minutes in duration and shall not be less than 3.5 standard units nor greater than 11.0 standard units at any time.

2. Metals shall be expressed in terms of total metal (sum of dissolved and suspended fractions of the metal).

**B. DEFINITIONS**

1. A "calendar day" is defined as any 24 hour period.
2. A "composite sample" is a combination of not less than 8 effluent portions, of at least 100 ml, collected continuously over a period of 24 hours. The composite sample must be flow proportioned by either time interval between each aliquot or by volume as it relates to collection of the previous aliquot. Aliquots may be collected manually or automatically.
3. The "daily maximum concentration" is a limitation on the average concentration, in milligrams per liter, of the discharge during any calendar day.
  - a. When a proportional-to-flow composite sampling device is used, the daily concentration is the concentration of that 24 hour composite.
  - b. When other sampling means are used, the daily concentration is the arithmetic mean of the concentrations of equal volume samples collected during any calendar day or sampling period.
4. A "grab sample" is a single effluent portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the total discharge.
5. The "monthly average concentration" measured in milligrams per liter, other than for fecal coliform bacteria, is the arithmetic mean of all the composite samples collected in a one-month period. The monthly average for fecal coliform bacteria is the geometric mean of samples collected in a one-month period. For parameters measured less than twice per month, only the daily maximum value shall be reported.
6. A "quarter" is defined as any one of the following month periods: January 1st through March 31st and April 1st through June 30, July 1st through September 30th, October 1st through December 31st.

## C. MONITORING PROCEDURES

### 1. Representative Sampling

Samples and measurements taken in compliance with the monitoring requirements specified above in Part I.A. 1. shall be representative of the volume and nature of the monitored discharge, and shall be taken after treatment, prior to mixing with uncontaminated storm runoff or the receiving stream.

### 2. Test Procedures

Test procedures for the analysis of pollutants and all pollutant parameters shall conform to regulations published pursuant to Title 40 C.F.R. Part 136, as amended, promulgated pursuant to Section 304(h) of the Act.

### 3. Recording of Results

For each measurement or sample taken pursuant to the requirements of Part I.A. 1. and Part II of this Consent Order, the Respondent shall record the following information:

- a. The exact place, date, and time of sampling;
- b. The exact person(s) collecting samples;
- c. The dates and times the analyses were performed;
- d. The person(s) or laboratory who performed the analyses;
- e. The analytical techniques or methods used, and;
- f. The results of all required analyses.

### 4. Records Retention

All records and information resulting from the monitoring activities required by Part I.A.1. and Part II of this Consent Order including all records of analyses performed and calibration and maintenance of instrumentation shall be retained for a minimum of six (6) years.

## D. REPORTING

### 1. Monitoring Results

a. Monitoring results for sampling required under Part I shall be submitted to the OSC monthly using Discharge Monitoring Report Forms ("DMR") supplied by EPA. Monitoring results for sampling required under Part II shall be submitted as an attachment to the DMR. Submittals shall be postmarked no later than 15 days after the completion of the reporting period. Respondent shall file two copies of the DMR and the instream monitoring results with the OSC. A copy should be retained for the Respondent's files. Discharge Monitoring Reports and any communication regarding compliance with the conditions of this Appendix must be sent to:

Charlie Stevens  
On Scene Coordinator  
U.S. Environmental Protection Agency  
345 Courtland Street  
Atlanta, GA 30365

b. The first Discharge Monitoring Report filed pursuant to Appendix I is due on October 20, 1991.

c. Discharge Monitoring Reports must be signed and certified by a responsible corporate officer, as defined at 40 CFR 122.22, or a general partner or proprietor, or a principal municipal executive officer or ranking elected official, or a duly authorized representative. Such authorization must be submitted in writing and must explain the duties and responsibilities of the authorized representative.

### 2. Additional Monitoring by Respondent

a. If the Respondent monitors any pollutant at the locations designated herein more frequently than required by this Consent Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall also be indicated.

## PART II

## A. INSTREAM MONITORING STATIONS

Three instream monitoring stations will be required as follows:

1. On North Potato Creek, at Isabella, upstream from the influence of the discharge.
2. On Burra-Burra Creek upstream of the confluence of Burra-Burra Creek and North Potato Creek.
3. On North Potato Creek downstream from the confluence of Burra-Burra Creek and North Potato Creek.
4. By October 20, 1991, the Respondent shall submit to the OSC a brief description of each monitoring station and a map, sketch or schematic diagram showing the location of each monitoring station.

## B. MEASUREMENT OF PARAMETERS

1. Respondent shall begin sampling from the instream monitoring stations by November 1, 1991. The instream monitoring stations shall be sampled for the same parameters that are monitored at the point of discharge. The instream monitoring will be conducted with a measurement frequency of once a quarter by composite sample except pH which shall be continuously monitored. All monitoring results from the instream monitoring stations and analysis of those results shall be sent to the OSC with the monthly DMR form. Each monitoring station shall have the capability of collecting 24-hour composite samples for each of the following parameters:

Fluoride	Sulfide/Sulfate
Antimony	Nickel
Arsenic	Selenium
Barium	Thallium
Bismuth	Tin
Manganese	
Hardness, as CaCO <sub>3</sub>	Total Dissolved Solids
Settleable Solids	Total Suspended Solids

2. Each monitoring station shall have the capability of the monitoring the following parameters with grab samples:

Settleable Solids  
Chemical Oxygen Demand  
Temperature\*  
Total Phenolics  
pH\*

\*The instream monitoring stations shall be capable of measuring these parameters with continuous monitoring.



APPENDIX 2  
AOC No. 91-36-C

PART I

A. EFFLUENT LIMITATIONS, MONITORING, AND REPORTING REQUIREMENTS

1. The operation of the Site shall cause Respondent to discharge water from defunct mines and tailings pond overflow water through the Site to Burra-Burra Creek at mile 1.5. The discharge from the Site shall be limited and monitored by the Respondent as specified below.

<u>Effluent Characteristic</u>	<u>Effluent Limitations</u>		<u>Monitoring Requirements</u>	
	Monthly Avg. Conc. <u>mg/l</u>	Daily Max. Conc. <u>mg/l</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow*	report	report	continuous	recorder
Settleable Solids		0.5**	2/month	grab
Total Suspended Solids	30.0	40.0	5/week	composite
Total Dissolved Solids	Report	2000	1/week	composite
Cadmium, total	0.0009	0.0028	2/month	composite
Chromium, total	0.05	0.1	2/week	composite
Copper, total	0.009	0.014	2/week	composite
Iron, total	1.0	2.0	2/week	composite
Lead, total	0.002	0.057	2/week	composite
Mercury, total	0.00001	0.0024	2/month	composite
Zinc, total	0.083	0.092	2/week	composite
pH	within range	6.0-9.0	continuous	recorder
pH, instream	report minimum, max		5/week	grab
Silver, total	0.001	0.002	2/month	composite
Dissolved Oxygen	monitor	monitor	continuous	

Chronic Whole Effluent  
Toxicity

See Part II of this Appendix.

\* Respondent shall submit reports for monthly average flow and maximum daily flow in million gallons per day (MGD).

\*\* The daily maximum concentration of settleable solids shall be 0.5 milliliters per liter.

2. Metals shall be expressed in terms of total metal (sum of dissolved and suspended fractions of the metal).
3. There shall be no distinctly visible floating scum, oil or other matter contained in the wastewater discharge.

4. The wastewater discharge must result in no other materials in concentrations sufficient to be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream.
5. The wastewater discharge must not cause an objectionable color contrast in the receiving stream.

B. DEFINITIONS

1. A "calendar day" is defined as any 24 hour period.
2. A "composite sample" is a combination of not less than 8 effluent portions, of at least 100 ml, collected continuously over a period of 24 hours. The composite sample must be flow proportioned by either time interval between each aliquot or by volume as it relates to collection of the previous aliquot. Aliquots may be collected manually or automatically.
3. The "daily maximum concentration" is a limitation on the average concentration, in milligrams per liter, of the discharge during any calendar day.
  - a. When a proportional-to-flow composite sampling device is used, the daily concentration is the concentration of that 24 hour composite.
  - b. When other sampling means are used, the daily concentration is the arithmetic mean of the concentrations of equal volume samples collected during any calendar day or sampling period.
4. A "grab sample" is a single effluent portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the total discharge.
5. The "monthly average concentration" measured in milligrams per liter, other than for fecal coliform bacteria, is the arithmetic mean of all the composite samples collected in a one-month period. The monthly average for fecal coliform bacteria is the geometric mean of samples collected in a one-month period. For parameters measured less than twice per month, only the daily maximum value shall be reported.
6. A "quarter" is defined as any one of the following month periods: January 1st through March 31st and April 1st through June 30, July 1st through September 30th, October 1st through December 31st.

## C. MONITORING PROCEDURES

### 1. Representative Sampling

Samples and measurements taken in compliance with the monitoring requirements specified above in Part I.A.1. shall be representative of the volume and nature of the monitored discharge, and shall be taken after treatment, prior to mixing with uncontaminated storm runoff or the receiving stream.

### 2. Test Procedures

Test procedures for the analysis of pollutants and all pollutant parameters in Parts I, II and III of this Consent Order shall conform to regulations published pursuant to Title 40 C.F.R. Part 136, as amended, promulgated pursuant to Section 304(h) of the Act.

### 3. Recording of Results

For each measurement or sample taken pursuant to the requirements of Part I.A.1., Part II or Part III of this Consent Order, the Respondent shall record the following information:

- a. The exact place, date, and time of sampling;
- b. The exact person(s) collecting samples;
- c. The dates and times the analyses were performed;
- d. The person(s) or laboratory who performed the analyses;
- e. The analytical techniques or methods used, and;
- f. The results of all required analyses.

### 4. Records Retention

All records and information resulting from the monitoring activities required by Part I.A.1., Part II or Part III of this Consent Order including all records of analyses performed and calibration and maintenance of instrumentation shall be retained for a minimum of six (6) years.

## D. REPORTING

### 1. Monitoring Results

- a. Monitoring results for sampling required under Part I and Part II shall be submitted to the OSC monthly using Discharge Monitoring Report Forms ("DMR") supplied by EPA. Monitoring results for sampling required under Part III shall be submitted as an attachment to the DMR. Submittals shall be postmarked no later than 15 days after the completion of the reporting period. Respondent shall file two copies of the DMR and the instream monitoring results with the OSC. A copy should be retained for the Respondent's files. Discharge Monitoring Reports and any communication regarding compliance with the conditions of this Appendix must be sent to:

Charlie Stevens  
On Scene Coordinator  
U.S. Environmental Protection Agency  
345 Courtland Street  
Atlanta, GA 30365

- b. The first Discharge Monitoring Report pursuant to Appendix II is due on October 20, 1992.
- c. Discharge Monitoring Reports must be signed and certified by a responsible corporate officer, as defined at 40 CFR 122.22, or a general partner or proprietor, or a principal municipal executive officer or ranking elected official, or a duly authorized representative. Such authorization must be submitted in writing and must explain the duties and responsibilities of the authorized representative.

### 2. Additional Monitoring by Respondent

- a. If the Respondent monitors any pollutant at the locations designated herein more frequently than required by this Consent Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall also be indicated.

## PART II

## A. TOXIC POLLUTANTS

1. Respondent shall notify the OSC as soon as it knows or has reason to believe:
  - a. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis, of any toxic substance(s) (listed at 40 CFR 122, Appendix D, Table II and III) which is not limited in the Consent Order, if that discharge will exceed the highest of the following "notification levels":
    - i. One hundred micrograms per liter (100 ug/l);
    - ii. Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2-4- dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
    - iii. Five (5) times the maximum concentration value reported for that pollutant in the discharge limitations in accordance with 122.21(g)(7).
  - b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the Consent Order, if that discharge will exceed the highest of the following "notification levels":
    - i. Five hundred micrograms per liter (500 ug/l);
    - ii. One milligram per liter (1 mg/l) for antimony;
    - iii. Ten (10) times the maximum concentration value reported for that pollutant in the discharge limitations in accordance with 122.21(g)(7).

B. BIOMONITORING REQUIREMENTS, CHRONIC

1. a. The Respondent shall initiate the series of tests described below beginning on September 20, 1992 to evaluate whole effluent toxicity of the discharge from the Site. All test species, procedures and quality assurance criteria used shall be in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA/600/4-89/001 or the most current edition. The dilution/control water used will be a moderately hard water as described in EPA/600/4-89-001, Section 7 (or the most current edition). A standard reference toxicant quality assurance test shall be conducted concurrently with each species used in the toxicity tests and the results submitted with the discharge monitoring report ("DMR"). Alternatively, if monthly QA/QC reference toxicant tests are conducted, these results must be submitted with the DMR.
- b. The Respondent shall conduct a daphnid (Ceriodaphnia dubia) Survival and Reproduction Test and a fathead minnow (Pimephales promelas) Larval Survival and Growth Test. These tests shall be conducted using a control (0% effluent) and one test concentration consisting of 100% effluent (equivalent to the Receiving Water Concentration ("RWC") of the effluent in the receiving water at critical conditions). Unacceptable chronic toxicity will be demonstrated if either test results in a no observable effect concentration ("NOEC") less than 100% effluent. All test results shall be statistically analyzed according to Appendix H, EPA/600/4-89/001, or the most current edition.
- c. For each set of tests conducted, a minimum of three different 24-hour composite samples of final effluent shall be collected and used per the sampling schedule of Section 8.1.4.2, EPA/600/4-89/001 (or the most current edition). All test solutions shall be renewed daily. If test results do not meet the acceptability criteria of either Section 12, paragraph 12.10 or Section 10, paragraph 11.11, EPA/600/4-89/001 (or the most current edition), that test shall be repeated. A chronic test will be considered valid only if the acceptability criteria referenced above are met.

- d. If mortality occurs in the RWC test concentration prior to the end of the test and control mortality is acceptable at that time, that test (including the control) shall be terminated with the conclusion that the sample demonstrates unacceptable chronic toxicity.
2. The toxicity tests specified above shall be conducted once every two months for a period of one year following initiation of the tests and once every 6 months thereafter for the duration of the Consent Order, if no toxicity is demonstrated during the first year of testing. If toxicity is demonstrated during the first year of testing, the measurement frequency will remain once every two months for the duration of the Consent Order.
3.
  - a. Results from "routine" tests shall be reported according to EPA/600/4-89/001, Section 9, Report Preparation (or the most current edition), and shall be submitted as an attachment to the DMR. Such results are to be entered on the DMR in the following manner:
  - b. For the chronic test results, if the NOEC of a test species is less than 100% effluent, '< 100%' should be entered on the DMR for that species. If the NOEC of a test species is greater than or equal to 100% effluent, '>100%' should be entered.
4.
  - a. If unacceptable chronic toxicity (a NOEC less than 100% effluent in either test) is found in a "routine" test, the Respondent shall conduct two additional toxicity tests on the specie(s) indicating unacceptable toxicity. For each additional test, the sample collection requirements and test acceptability criteria specified in Section 1.c. above, must be met for the test to be considered valid. The first test shall begin within two weeks of the end of the "routine" test and the second test shall be conducted two weeks later. If either or both of these tests are invalid, additional test(s) are to be conducted every two weeks until two valid tests are completed (e.g. if the first test is valid and the second test is not, the Respondent shall continue to conduct test until one more test is valid). The additional tests will be used to determine if the toxicity found in the "routine" test is still present.

- b. For "routine" tests with unacceptable chronic toxicity, the Respondent shall conduct additional daphnid (Ceriodaphnia dubia) Survival and Reproduction and/or fathead minnow (Pimephales promelas) Survival and Growth multi-concentration tests, as appropriate. The tests will be conducted on a control, 100% effluent, and the following % effluent concentrations: 12.5%, 25.0%, 50.0%, and 75.0%. The sample collection requirements specified in Section 1.c. above shall be met.
  - c. Results from additional tests, required due to unacceptable chronic toxicity in the "routine" test, shall be submitted in a single report prepared according to EPA/600/4-89/001, Section 9, Report Preparation (or the most current edition) and submitted within 45 days of completion of the second additional, valid test.
5. For all test conducted, a final effluent sample must be used.

### PART III

#### A. INSTREAM MONITORING STATIONS

Three instream monitoring stations will be required as follows:

1. On North Potato Creek, at Isabella, upstream from the influence of the discharge.
2. On Burra-Burra Creek upstream of the confluence of Burra-Burra Creek and North Potato Creek.
3. On North Potato Creek downstream from the confluence of Burra-Burra Creek and North Potato Creek.



## B. MEASUREMENT OF PARAMETERS

1. The instream monitoring stations shall be sampled for the same parameters that are monitored at the point of discharge. The instream monitoring will be conducted with a measurement frequency of once a quarter by composite sample except pH which shall be continuously monitored. All monitoring results from the instream monitoring stations and analysis of those results shall be sent to the OSC with the monthly DMR form. Each monitoring station shall have the capability of collecting 24-hour composite samples of the following parameters:

Fluoride	Sulfide/Sulfate
Antimony	Nickel
Arsenic	Selenium
Barium	Thallium
Bismuth	Tin
Manganese	
Hardness, as CaCO <sub>3</sub>	Total Dissolved Solids
Settleable Solids	Total Suspended Solids

2. Each monitoring station shall have the capability of monitoring with grab samples the following parameters:

Settleable Solids  
 Chemical Oxygen Demand  
 Temperature\*  
 Total Phenolics  
 pH\*

\*The instream monitoring stations shall be capable of measuring these parameters with continuous monitoring.